

# Hamilton County, Ohio The Metropolitan Sewer District of Greater Cincinnati Introduction

September 23, 2015





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# Introduction to MSD





# MSD Background

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- The Metropolitan Sewer District of Greater Cincinnati (MSD):
  - Collects and treats industrial and residential wastewater for municipalities and unincorporated areas of Hamilton County.
  - Is a County Sewer District, owned and governed by the Board of County Commissioners.
  - Was formed originally in the 1920's, became Hamilton County Sewer District #1 in 1955, and renamed MSD in 1968.
  - Is operated by the City of Cincinnati as Agent for County through April 2018.

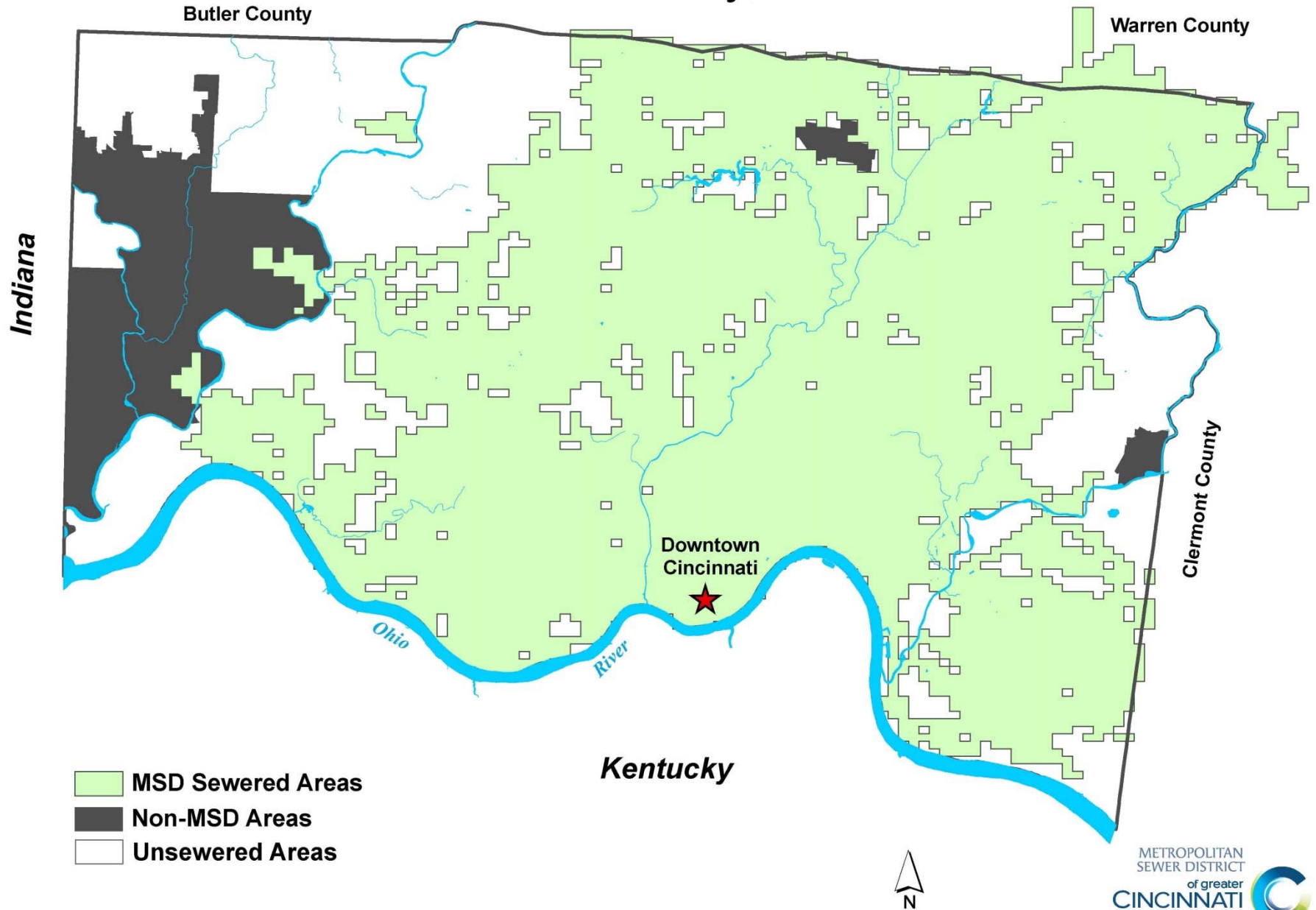


# MSD's Scope

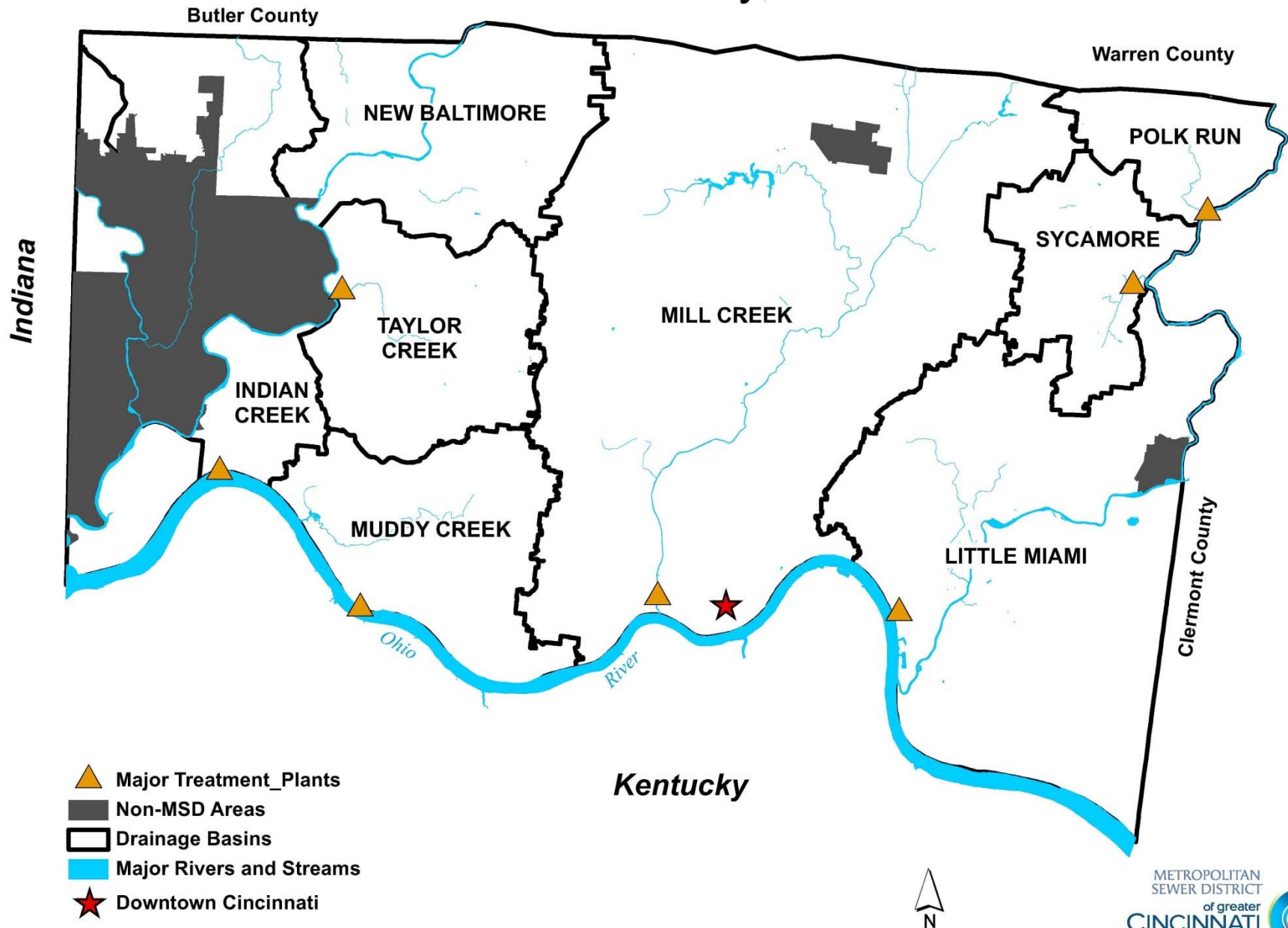
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- 290 square miles
- Over 200,000 residential, commercial, and industrial sewer connections
- Over 3,000 miles of sanitary and combined sewers
- Seven major wastewater treatment plants
- Two package treatment plants, 99 pump stations and 10 major pumping stations

# Hamilton County, Ohio



# Hamilton County, Ohio





# MSD Treatment Plants

- MSD has seven major treatment plants, the largest of which being the Mill Creek treatment plant. In 2013 MSD treated over 70 billion gallons of wastewater, averaging 194 million gallons per day.

Plant	Year First Placed In Service	Design Capacity (mgd) through both Primary and Secondary Treatment*
Mill Creek**	1959	130.0
Little Miami	1953	38.0
Muddy Creek	1961	15.0
Sycamore	1958	10.0
Polk Run	1970	8.0
Taylor Creek	1997	5.5
Indian Creek***	1995	1.5

\* Reflects plants designed capacity to treat wastewater in dry weather

\*\* The Mill Creek Plant has a wet weather hydraulic capacity of 360 mgd through secondary

\*\*\* As a major plant



# MSD Characteristics

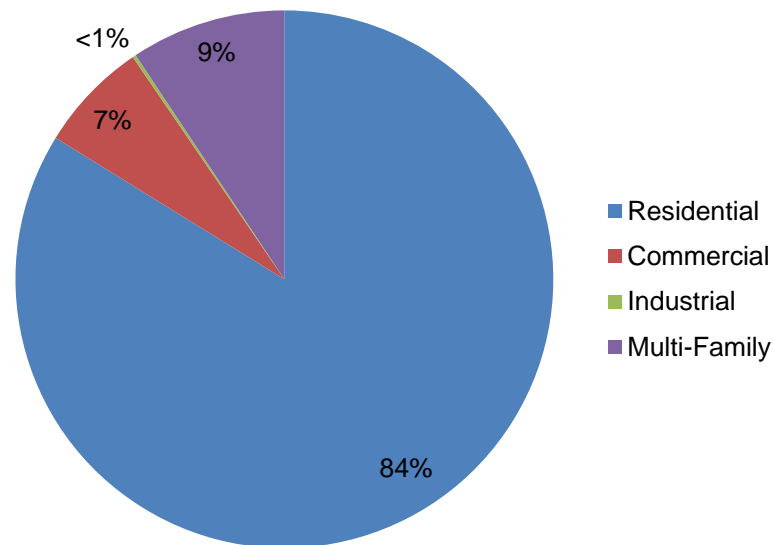




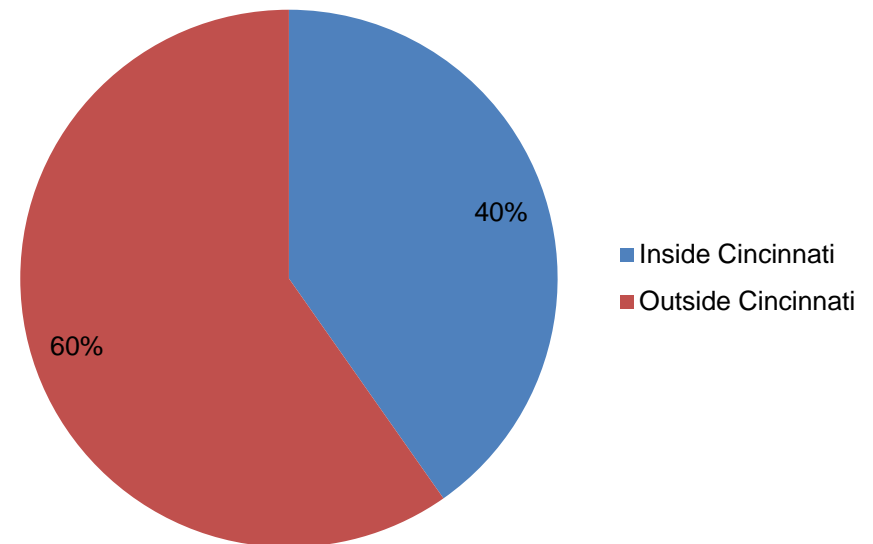
# Customer Accounts

- Residential Customers make up 84% of MSD's customer accounts. The account data is for number of customer accounts served, not number of people served. Approximately 40% of sewer connections are within the City of Cincinnati.

**Accounts\*  
2014**



**Sewer Connections**

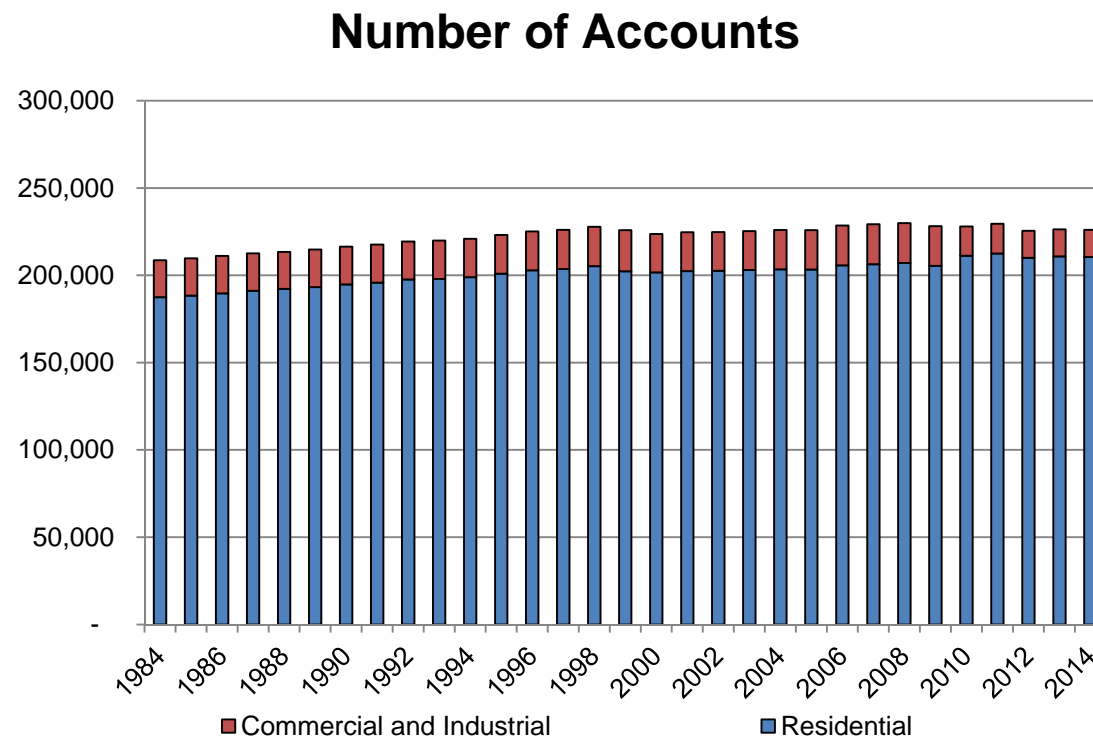


\* Accounts are based on Greater Cincinnati Water Works ("GCWW") data. GCWW bills approximately 90% of wastewater customers, with the remaining 10% billed by eight municipalities in the County and by one adjoining county.



# Customer Accounts

- The number of MSD's customer accounts has historically been fairly stable, with slight growth.

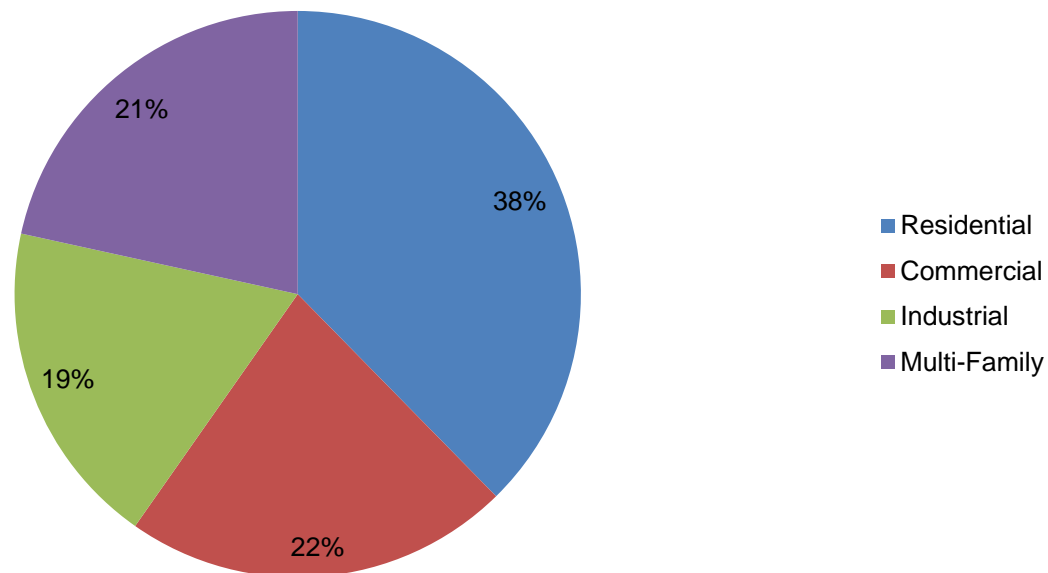




# Billable Volume

- MSD's billable volume is much more diverse than its number of accounts by type. Billable volume is based on water usage.

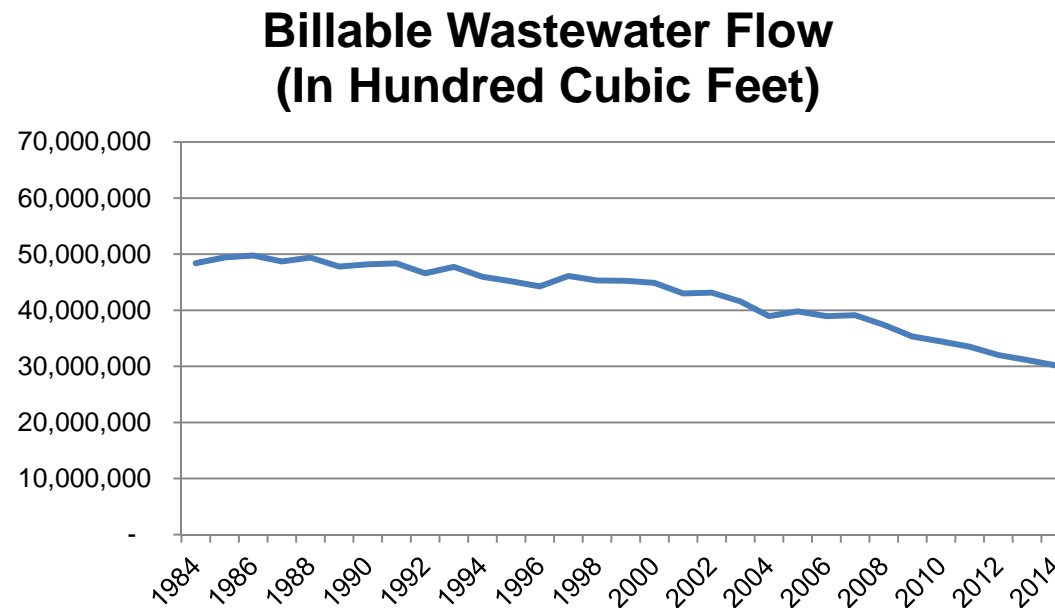
**Billable Volume  
2014**





# Billable Volume

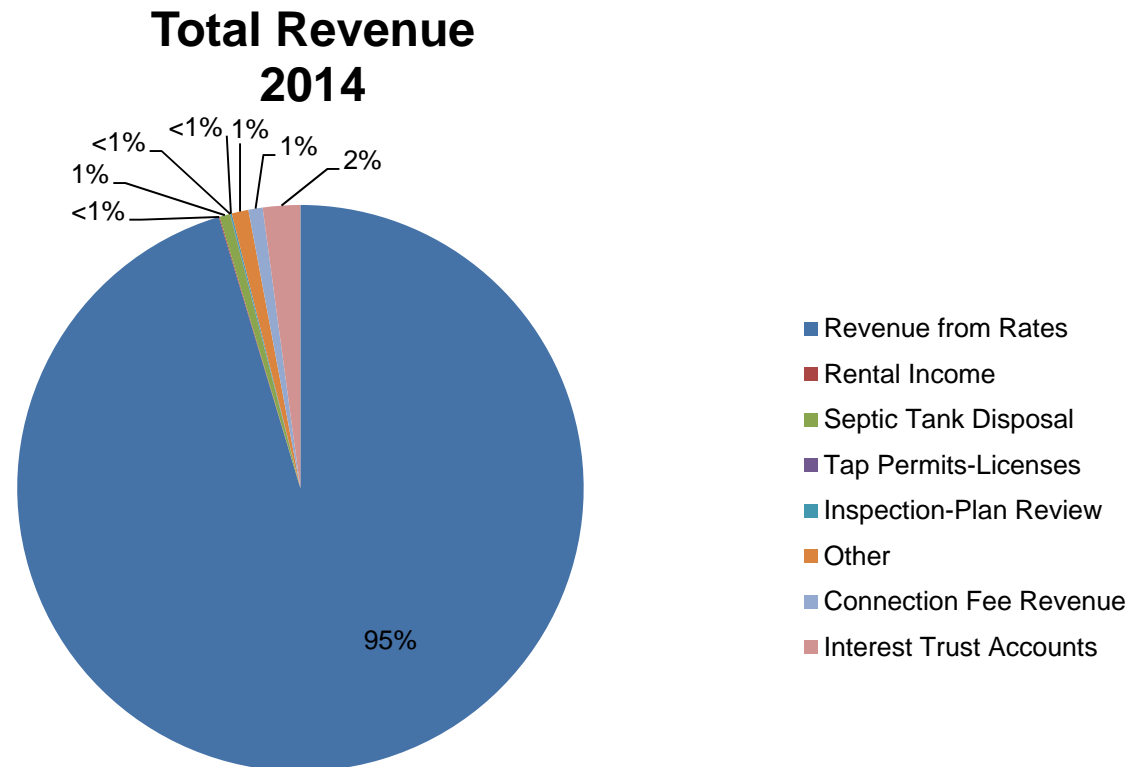
- While the customer base has remained fairly steady with slight growth, MSD's billable volume has been decreasing due to reduced water usage.





# Revenue Components

- 95% of MSD's total revenues are derived from rate charges.

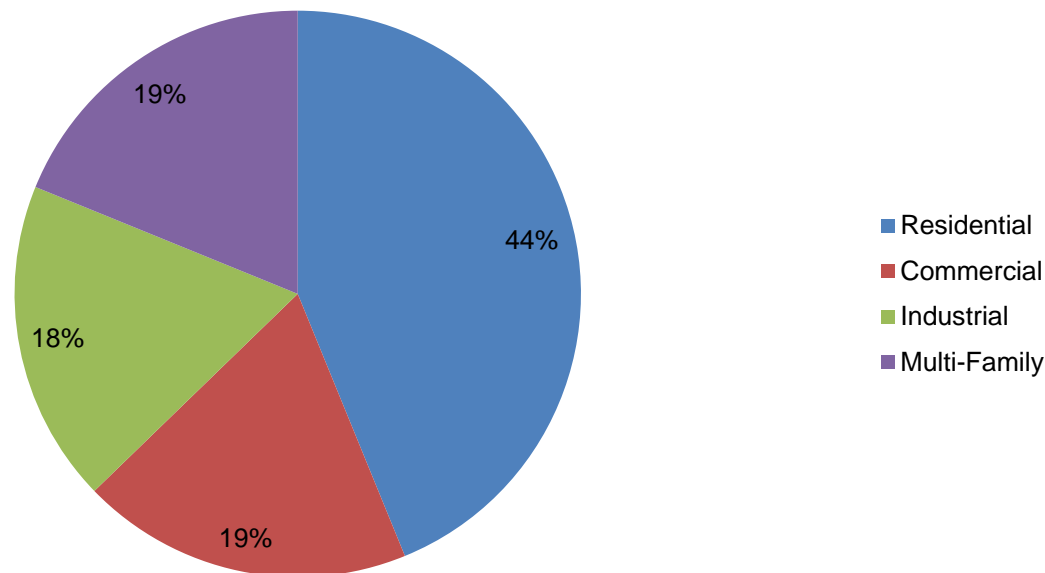




# Revenue Components

- MSD's rate revenues are also diverse in terms of their source. Rate revenue represents the dollars that are paid by customers to MSD. Please note that the revenues from industrial customers include surcharges and pretreatment charges.

**Rate Revenues  
2014**

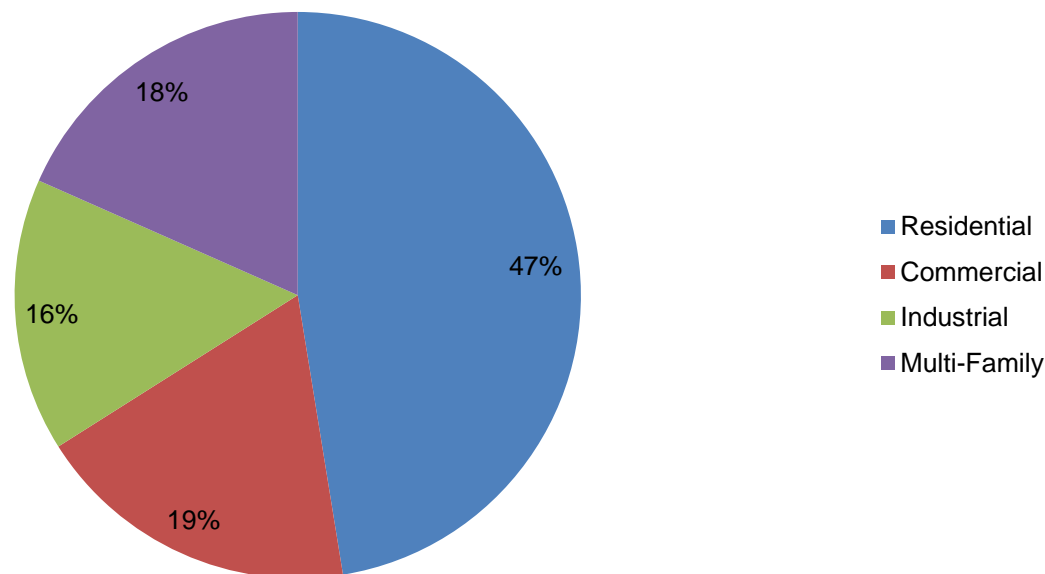




# Cost of Service

- Cost of service is the amount of money that it costs MSD to service each customer type in a given year. Cost of service is determined by the engineering firm Black and Veatch as part of their yearly rate study.

**Cost of Service  
2014**

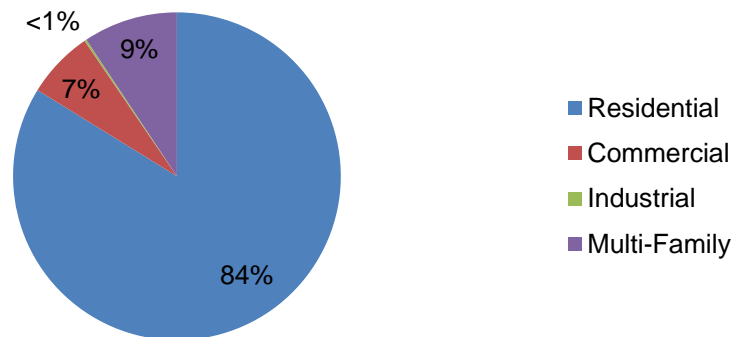




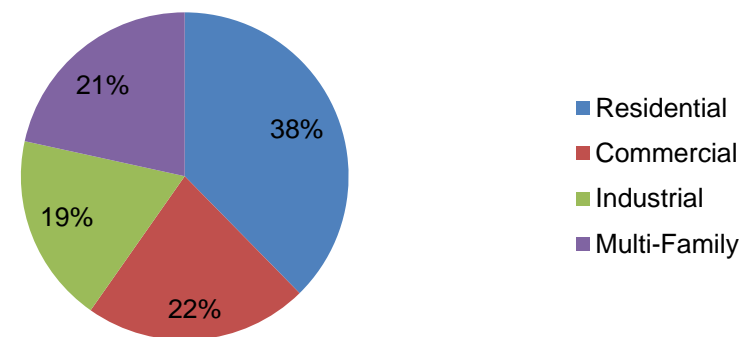
# System Snapshot



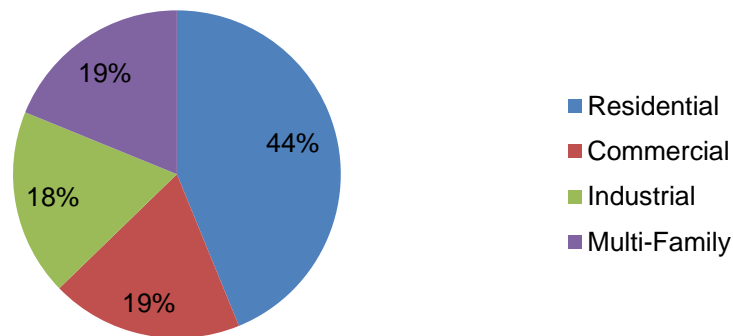
## Accounts 2014



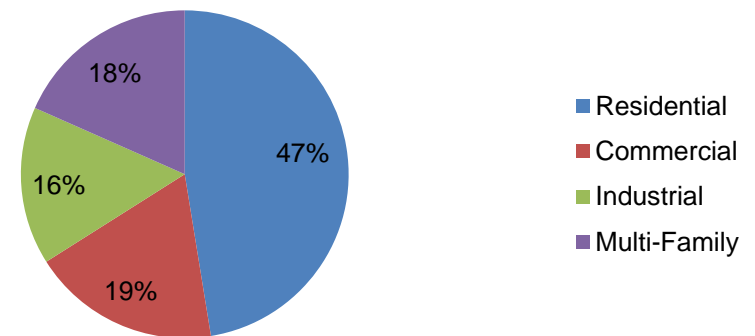
## Billable Volume 2014



## Rate Revenues 2014



## Cost of Service 2014



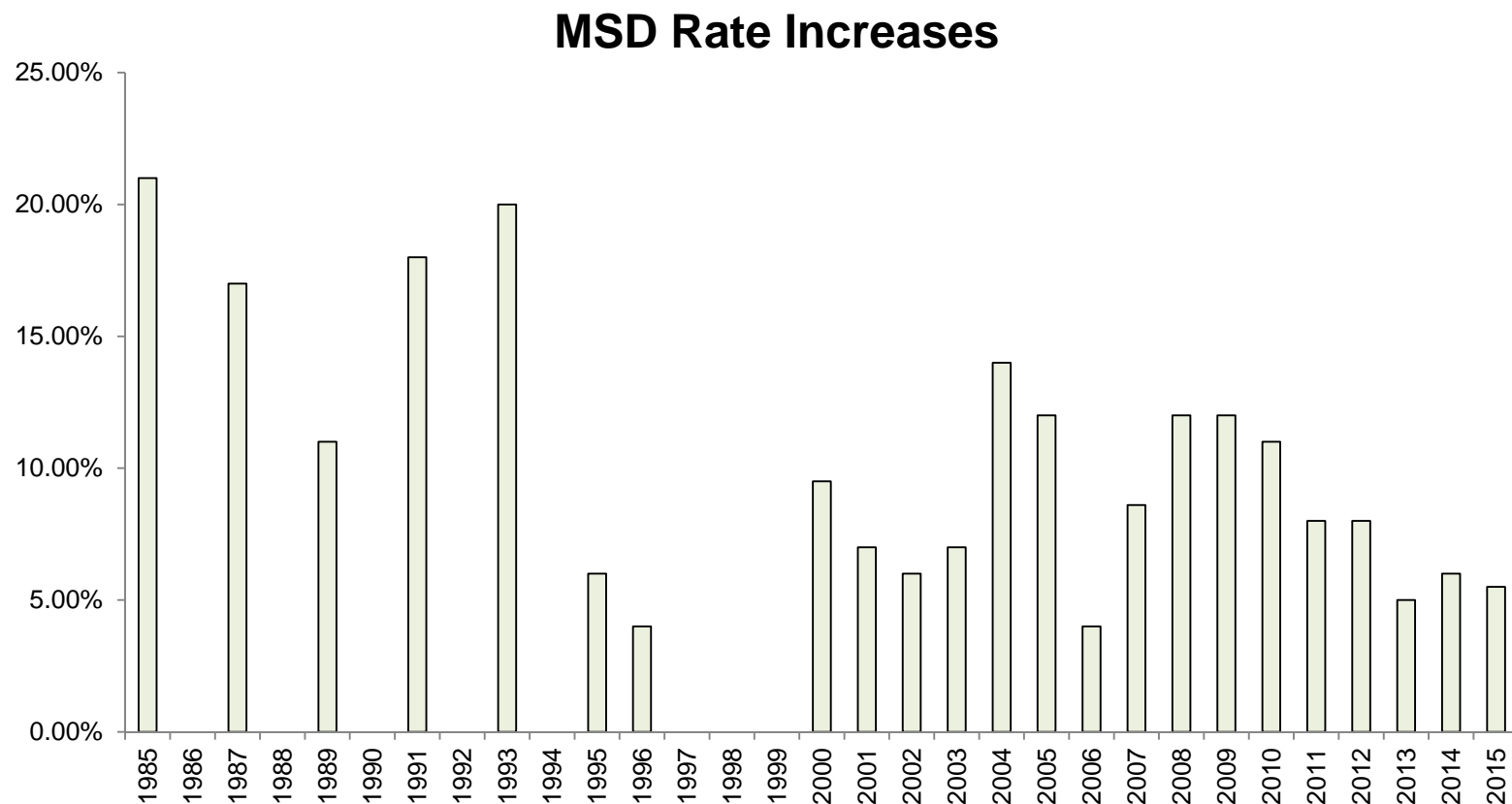
# MSD Rate Components





# Rate Increases

- MSD's rate increases have been necessary to meet rising revenue requirements.





# History of Rate Components

- There are three primary components that are paid from MSD's operating revenue:
  - Operating expenses
  - Debt service
  - Cash funded projects
- The debt service and cash funded projects are related to the capital program, which includes asset management and projects required by the EPA consent decree.
- Prior to the EPA consent decree, the largest costs to MSD were operating expenses.
- With the increased capital costs coming on line, operating expenses have decreased as an overall component of the rates.
- Cash funding of projects and debt service have increased in recent years, and are projected to increase further as additional mandatory projects are completed.



# History of Rate Components - Operating Expenses

- Prior to the EPA consent decree, the largest costs to MSD have been operating expenses, and therefore operating expenses have been a key driver in the necessary rates.
- Operating expenses consist of the following:
  - Personnel services
  - Purchased services
  - Utilities, fuel and supplies
  - Depreciation and amortization\*
  - Other expenses

\*Depreciation and amortization is a “non-cash” expense that does not have to be paid from rate revenues.



# History of Rate Components - Operating Expenses

- MSD's operating expense history is:

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014*</u>
Operating Expenses										
Personnel services	35,718	38,264	46,866	43,932	45,882	62,198	54,758	47,704	51,291	55,487
Purchased services	25,238	28,901	26,961	25,219	27,566	23,952	24,367	25,428	42,274	35,707
Utilities, fuel and supplies	19,715	20,785	21,025	22,935	21,362	24,030	22,181	19,481	20,579	19,668
Depreciation and amortization	29,295	30,552	31,507	32,064	38,623	44,674	49,222	54,823	63,503	56,121
Other expenses	7,447	9,056	8,679	8,947	9,015	10,188	10,517	8,805	12,145	9,156
Subtotal	<u>117,413</u>	<u>127,558</u>	<u>135,038</u>	<u>133,097</u>	<u>142,448</u>	<u>165,042</u>	<u>161,045</u>	<u>156,241</u>	<u>189,792</u>	<u>176,139</u>
Less: Depreciation and amortization	(29,295)	(30,552)	(31,507)	(32,064)	(38,623)	(44,674)	(49,222)	(54,823)	(63,503)	(56,121)
Less: Non-cash pension expenses	--	--	(3,916)	(3,643)	(3,311)	(14,087)	(4,460)	(3,045)	(5,494)	(8,862)
Total Operating Expenses	<u>88,118</u>	<u>97,006</u>	<u>99,615</u>	<u>97,390</u>	<u>100,514</u>	<u>106,281</u>	<u>107,363</u>	<u>98,373</u>	<u>120,795</u>	<u>111,156</u>

\* Unaudited

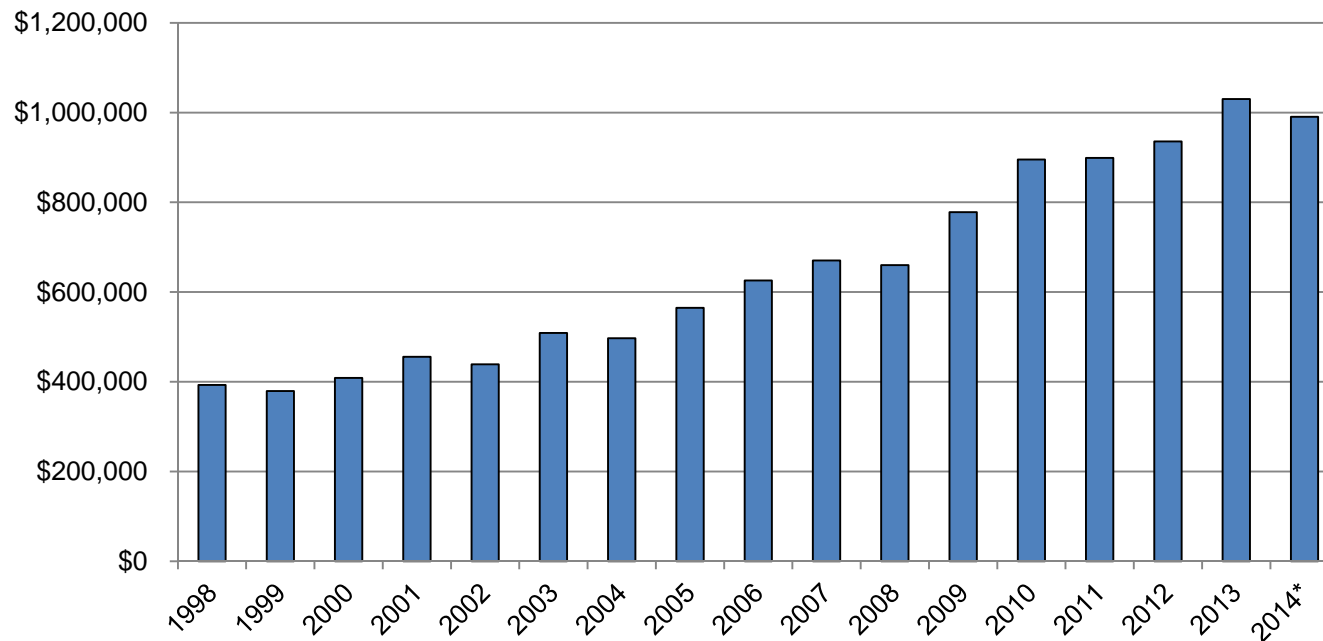
- A majority of the total operating expenses comes from personnel services.
- Since 2005 the average annual increase in operating expenses has been 2.6%.



# History of Rate Components – Outstanding Debt

- Cash funding of projects has been used in conjunction with debt funding of projects in order to decrease the total overall costs associated with the capital program, as it eliminates the requirement to pay interest.
- The amount of debt outstanding has been driven by the capital program, which includes asset management and projects required by the EPA consent decree.

**Outstanding Debt  
(\$ in thousands)**

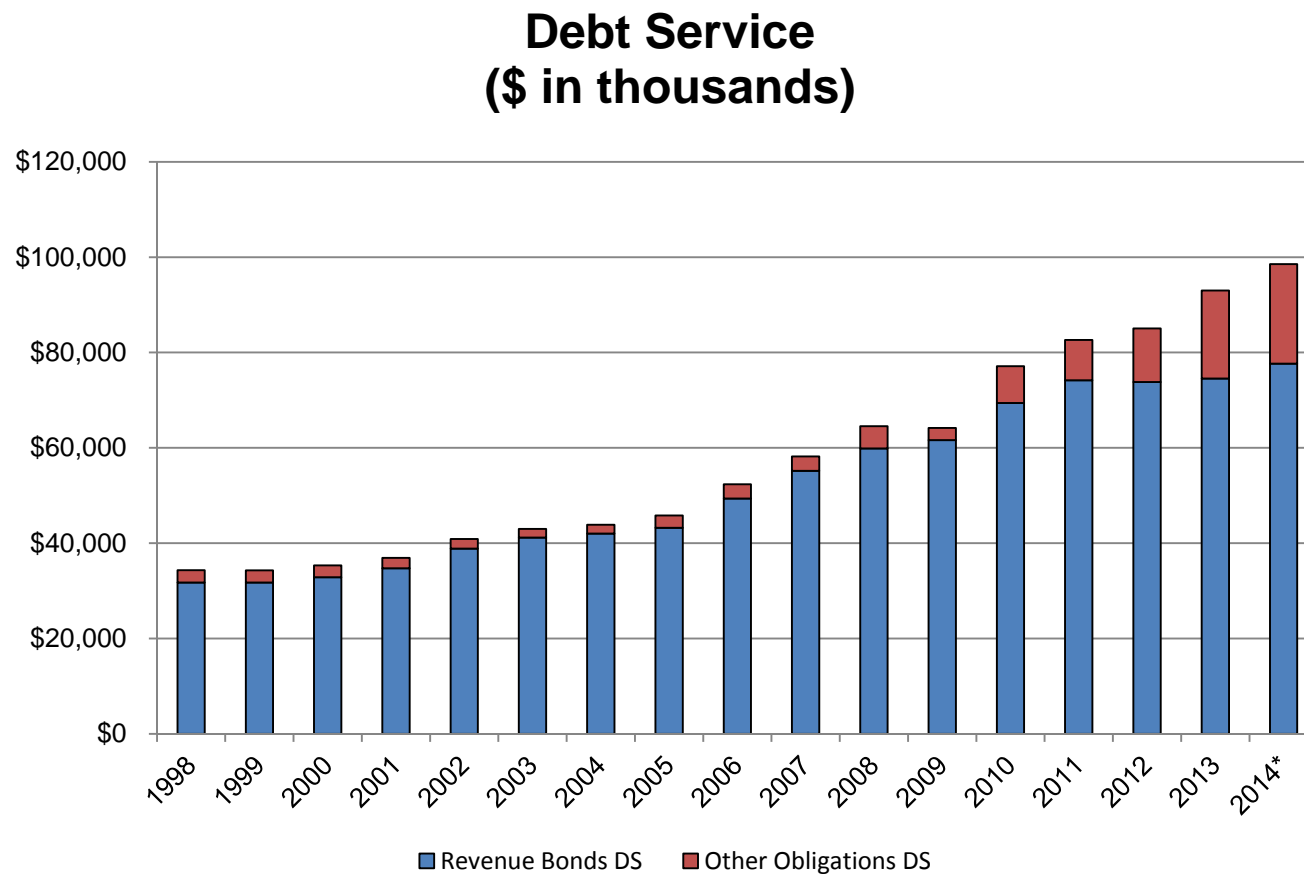


\*Unaudited



# History of Rate Components – Debt Service

- As the amount of outstanding debt has been driven by the capital program, so have MSD's debt service payments.



\*Unaudited





# History of Rate Components

- The debt service and funds for capital projects have been growing in line with the capital program. Revenues have needed to increase in order to meet these requirements.

	<u>2005</u>	<u>2006</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014*</u>
Revenues										
Total Operating Revenues	\$154,171	\$163,647	\$176,933	\$189,069	\$201,273	\$221,287	\$239,425	\$249,156	\$259,329	\$265,211
Interest Income	5,999	11,842	15,061	8,545	4,714	3,045	2,484	8,560	9,445	9,548
Capitalized Interest	612	1,001	2,188	1,768	1,121	681	226	507	--	--
Tap-in/Connection Fees	5,967	4,677	3,401	3,024	1,965	2,027	2,119	2,165	2,145	2,182
Total Pledged Revenues	\$166,749	\$181,167	\$197,583	\$202,406	\$209,073	\$227,040	\$244,254	\$260,388	\$270,919	\$276,941
Total Operating & Maintenance Expenses	(88,115)	(97,005)	(103,531)	(101,033)	(103,825)	(120,368)	(111,823)	(101,418)	(126,289)	(120,018)
Net Income Available for Debt Service	<u>\$78,634</u>	<u>\$84,162</u>	<u>\$94,052</u>	<u>\$101,373</u>	<u>\$105,248</u>	<u>\$106,672</u>	<u>\$132,431</u>	<u>\$158,970</u>	<u>\$144,630</u>	<u>\$156,923</u>
Projected Principal and Interest Requirements on all Obligations	\$45,792	\$52,340	\$58,176	\$64,536	\$64,169	\$77,127	\$82,624	\$85,062	\$93,005	\$98,527
Funds for Capital Projects	\$32,842	\$31,822	\$35,876	\$36,837	\$41,079	\$29,545	\$49,807	\$73,908	\$51,625	\$58,396

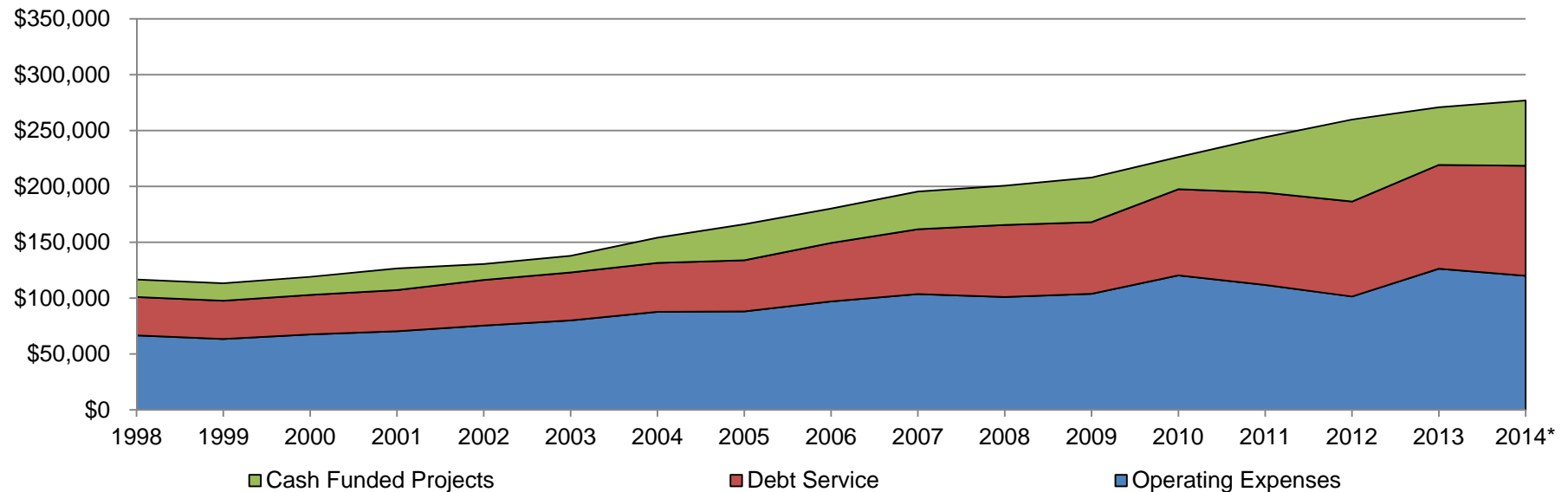
\*Unaudited



# History of Rate Components

- The combination of three separate components amounts to the total rate requirements for MSD. The total rate requirements have increased in the past several years.

**MSD Rate Requirement History  
(\$ in thousands)**



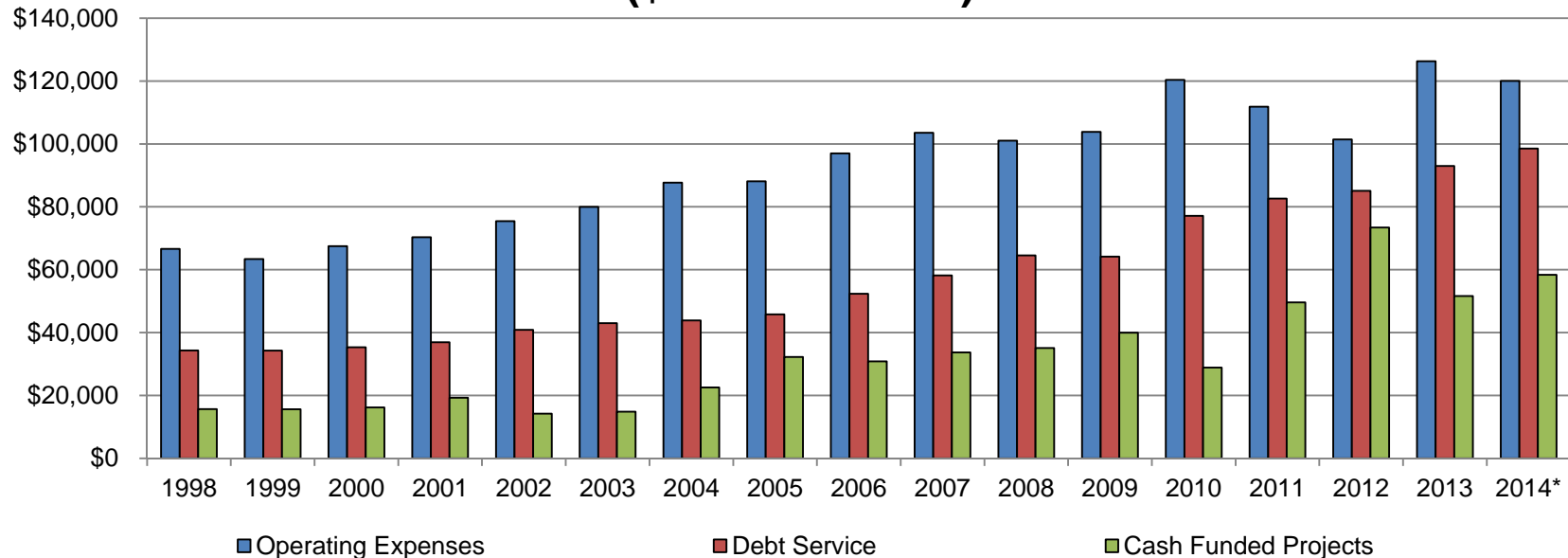
\*Unaudited



# History of Rate Components

- Debt service and cash funded projects have grown significantly relative to operating expenses.

**MSD Rate Requirement History**  
(\$ in thousands)



\*Unaudited



# History of Rate Components

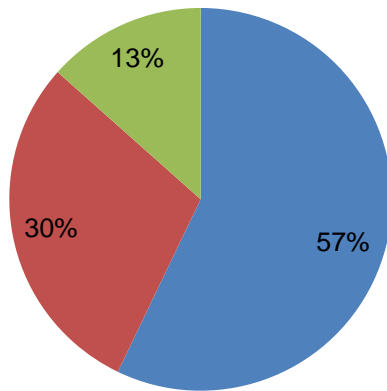
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- As indicated on the following page, there has been a shift in rate requirements from operating expenses to capital that has coincided with the increase in mandatory capital projects.
- In 1998, operating expenses represented 57% of the required user charge. By 2014 that percentage had declined to 43%.
- Capital costs (the combination of debt service and cash funded projects) represented 43% of the required user charge in 1998. By 2014 that percentage had risen to 57%.



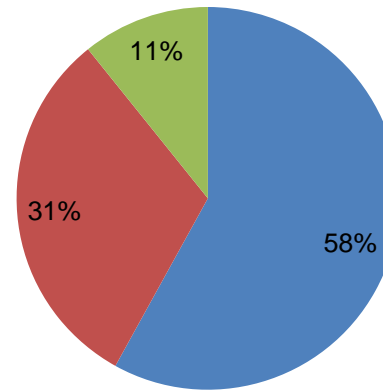
# History of Rate Components

**1998**



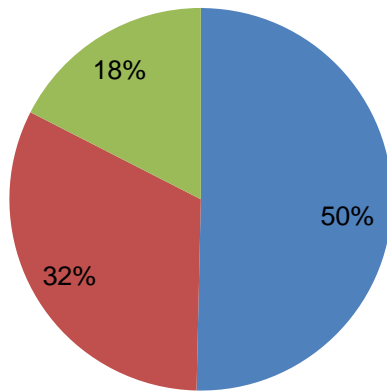
■ Operating Expenses  
■ Debt Service  
■ Cash Funded Projects

**2003**



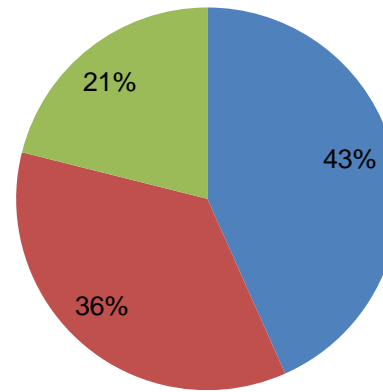
■ Operating Expenses  
■ Debt Service  
■ Cash Funded Projects

**2008**



■ Operating Expenses  
■ Debt Service  
■ Cash Funded Projects

**2014\***



■ Operating Expenses  
■ Debt Service  
■ Cash Funded Projects

\*Unaudited